

CLAIMS

Please amend the claims as follows:

1. (Currently Amended) ~~An apparatus~~ Apparatus for use in transmitting digital data through an audio channel ~~that may involve a lossy speech or audio compression algorithm~~, the apparatus comprising:

a data coder configured to convert the digital data into one or more types of sound parameters; and

a sound synthesizer coupled to the data coder and configured to convert the ~~generate~~ sound based on the one or more types of sound parameters ~~parameters into acoustic sound waves~~ to acoustically transfer the digital data.

2. (Currently Amended) The apparatus of claim 1, further comprising:

a storage medium configured to store one or more sets of relationships between bit patterns and the one or more types of sound parameters; and

wherein the data coder is configured to convert the digital data into the one or more types of sound parameters in accordance with ~~based on~~ the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

3. (Currently Amended) The apparatus of claim 2, wherein the storage medium comprises a look up table that predefines the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

4. (Currently Amended) The apparatus of claim 1, wherein a sound parameter represents one value or a range of values representative of user authentication information.

5. (Currently Amended) The apparatus of claim 1, wherein the one or more types of sound parameters comprises ~~a~~ at least one speech parameter representative of artificial speech.

6. (Currently Amended) ~~An apparatus~~ Apparatus for use in receiving digital data through an audio channel ~~that may involve a lossy speech or audio compression algorithm~~, the apparatus comprising:

a sound analyzer configured to receive acoustic sound waves and to extract one or more types of sound parameters from the received acoustic sound waves; and

a data decoder coupled to the sound analyzer and configured to convert the extracted one or more types of sound parameters into the digital data.

7. (Currently Amended) The apparatus of claim 6, further comprising:

a storage medium configured to store one or more sets of relationships between bit patterns and the one or more types of sound parameters; and

wherein the data decoder is configured to convert the extracted one or more types of sound parameters into the digital data in accordance with ~~based on~~ the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

8. (Currently Amended) The apparatus of claim 7, wherein the storage medium comprises a look up table that predefines the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

9. (Currently Amended) The apparatus of claim 6, wherein a sound parameter represents one value or a range of values representative of user authentication information.

10. (Currently Amended) The apparatus of claim 6, wherein the extracted one or more types of sound parameters comprise a at least one speech parameter representative of artificial speech.

11. (Currently Amended) A method for use in transmitting digital data through an audio channel ~~that may involve a lossy speech or audio compression algorithm~~, the method comprising:

converting digital data to be transmitted into one or more types of sound parameters; and  
~~generating sound based on~~ converting the one or more types of sound parameters parameters into acoustic sound waves to acoustically transfer the digital data.

12. (Currently Amended) The method of claim 11, further comprising:

storing one or more sets of relationships between bit patterns and the one or more types of sound parameters; and

wherein converting the digital data to be transmitted comprises converting the digital data into the one or more types of sound parameters in accordance with ~~based on~~ the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

13. (Currently Amended) The method of claim 12, wherein storing the one or more sets of relationships comprises storing a look up table that predefines the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

14. (Currently Amended) The method of claim 11, wherein a sound parameter represents one value or a range of values representative of user authentication information.

15. (Currently Amended) The method of claim 11, wherein the one or more types of sound parameters comprises a at least one speech parameter representative of artificial speech.

16. (Currently Amended) A method for use in receiving digital data through an audio channel ~~that may involve a lossy speech or audio compression algorithm~~, the method comprising:

extracting one or more types of sound parameters from received acoustic sound waves;  
and

converting the extracted one or more types of sound parameters into the digital data.

17. (Currently Amended) The method of claim 16, further comprising:

storing one or more sets of relationships between bit patterns and the one or more types of sound parameters; and

wherein converting the extracted one or more types of sound parameters comprises  
converting the extracted one or more types of sound parameters into the digital data in

accordance with ~~based on~~ the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

18. (Currently Amended) The method of claim 17, wherein storing the one or more sets of relationships comprises storing a look up table that predefines the one or more sets of relationships.

19. (Currently Amended) The method of claim 16, wherein a sound parameter represents one value or a range of values representative of user authentication information.

20. (Currently Amended) The method of claim 16, wherein the extracted one or more types of sound parameters comprise a at least one speech parameter representative of artificial speech.

21. (Currently Amended) An apparatus ~~Apparatus~~ for use in transmitting digital data through an audio channel ~~that may involve a lossy speech or audio compression algorithm~~, the apparatus comprising:

means for converting digital data to be transmitted into one or more types of sound parameters; and

means for ~~generating sound based on~~ converting the one or more types of sound ~~parameter~~ parameters into acoustic sound waves to acoustically transfer the digital data.

22. (Currently Amended) The apparatus of claim 21, further comprising:

means for storing one or more sets of relationships between bit patterns and the one or more types of sound parameters; and

wherein the means for converting converts the digital data into the one or more types of sound parameters in accordance with ~~based on~~ the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

23. (Currently Amended) The apparatus of claim 22, wherein the means for storing stores a look up table that predefines the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

24. (Currently Amended) An apparatus ~~Apparatus~~ for use in receiving digital data through an audio channel ~~that may involve a lossy speech or audio compression algorithm~~, the apparatus comprising:

means for extracting one or more types of sound parameters from received acoustic sound waves; and

means for converting the extracted one or more types of sound parameters into the digital data.

25. (Currently Amended) The apparatus of claim 24, further comprising:

means for storing one or more sets of relationships between bit patterns and the one or more types of sound parameters; and

wherein the means for converting converts the extracted one or more types of sound parameters into the digital data in accordance with ~~based on~~ the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

26. (Currently Amended) The apparatus of claim 25, wherein the means for storing stores a look up table that predefines the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

27. (Currently Amended) A machine ~~Machine~~ readable medium used for transmitting digital data through an audio channel ~~that may involve a lossy speech or audio compression algorithm,~~ the machine readable medium comprising:

codes for converting digital data to be transmitted into one or more types of sound parameters; and

codes for converting ~~generating sound based on~~ the one or more types of sound ~~parameter~~ parameters into acoustic sound waves to acoustically transfer the digital data..

28. (Currently Amended) The medium of claim 27, further comprising:

one or more sets of relationships between bit patterns and the one or more types of sound parameters; and

wherein the codes for converting converts the digital data into the one or more types of sound parameters in accordance with ~~based on~~ the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

29. (Currently Amended) ~~A machine~~ Machine readable medium used for receiving digital data through an audio channel ~~that may involve a lossy speech or audio compression algorithm,~~ the machine readable medium comprising:

codes for extracting one or more types of sound parameters from received compressed sound; and

codes for converting the extracted one or more types of sound parameters into the digital data.

30. (Currently Amended) The medium of claim 29, further comprising:

one or more sets of relationships between bit patterns and the one or more types of sound parameters; and

wherein the codes for converting converts the extracted one or more types of sound parameters into the digital data in accordance with ~~based on~~ the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

31. (Currently Amended) ~~An apparatus~~ Apparatus for use in transmitting and receiving digital data through an audio channel ~~that may involve a lossy speech or audio compression algorithm,~~ the apparatus comprising:

means for converting digital data to be transmitted into one or more types of sound parameters;

means for generating acoustic sound waves based on the one or more types of sound parameters;



means for extracting one or more types of sound parameters from received acoustic sound waves; and

means for converting the extracted one or more types of sound parameters into the digital data.

32. (Currently Amended) The apparatus of claim 31, further comprising:

means for storing one or more sets of relationships between bit patterns and the one or more types of sound parameters; and

wherein the means for converting converts the digital data into the one or more types of sound parameters in accordance with ~~based on~~ the one or more sets of relationships between the bit patterns and the one or more types of sound parameters, and wherein the means for converting converts the extracted one or more types of sound parameters into the digital data in accordance with ~~based on~~ the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

33. (Currently Amended) The apparatus of claim 32, wherein the means for storing stores a look up table that predefines the one or more sets of relationships between the bit patterns and the one or more types of sound parameters.

34. (New) A processor for use in transmitting digital data through an audio channel, the processor comprising:

a processing circuit configured to:

convert digital data to be transmitted into one or more types of sound parameters;  
and  
converting the one or more types of sound parameters into acoustic sound waves  
to acoustically transfer the digital data.

35. (New) A processor for use in receiving digital data through an audio channel, the  
processor comprising:

a processing circuit configured to:

extract one or more types of sound parameters from received acoustic sound  
waves; and

convert the extracted one or more types of sound parameters into the digital data.

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